

FORT STEVENS STORMWATER RETROFIT PROJECT

PUBLIC STAKEHOLDER SEMI-FINAL DESIGN MEETING

January 13, 2021

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GOVERNMENT OF THE
DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

AGENDA

- Project Area & Background
- Existing Conditions
- Project Objectives
- Restoration Approaches
- Project Design
- Timeline
- FAQs
- Q&A

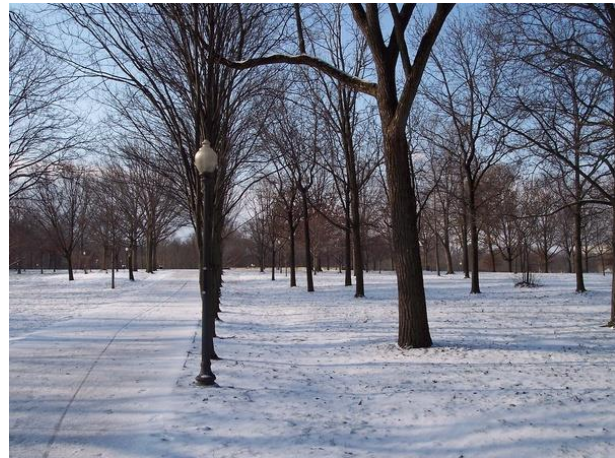
PROJECT LOCATION



BACKGROUND

What is stormwater?

- Stormwater is water that originates from rain, including snow and ice melt. Stormwater can soak into the soil, be stored on the land surface in ponds and puddles, evaporate, or contribute to surface runoff.



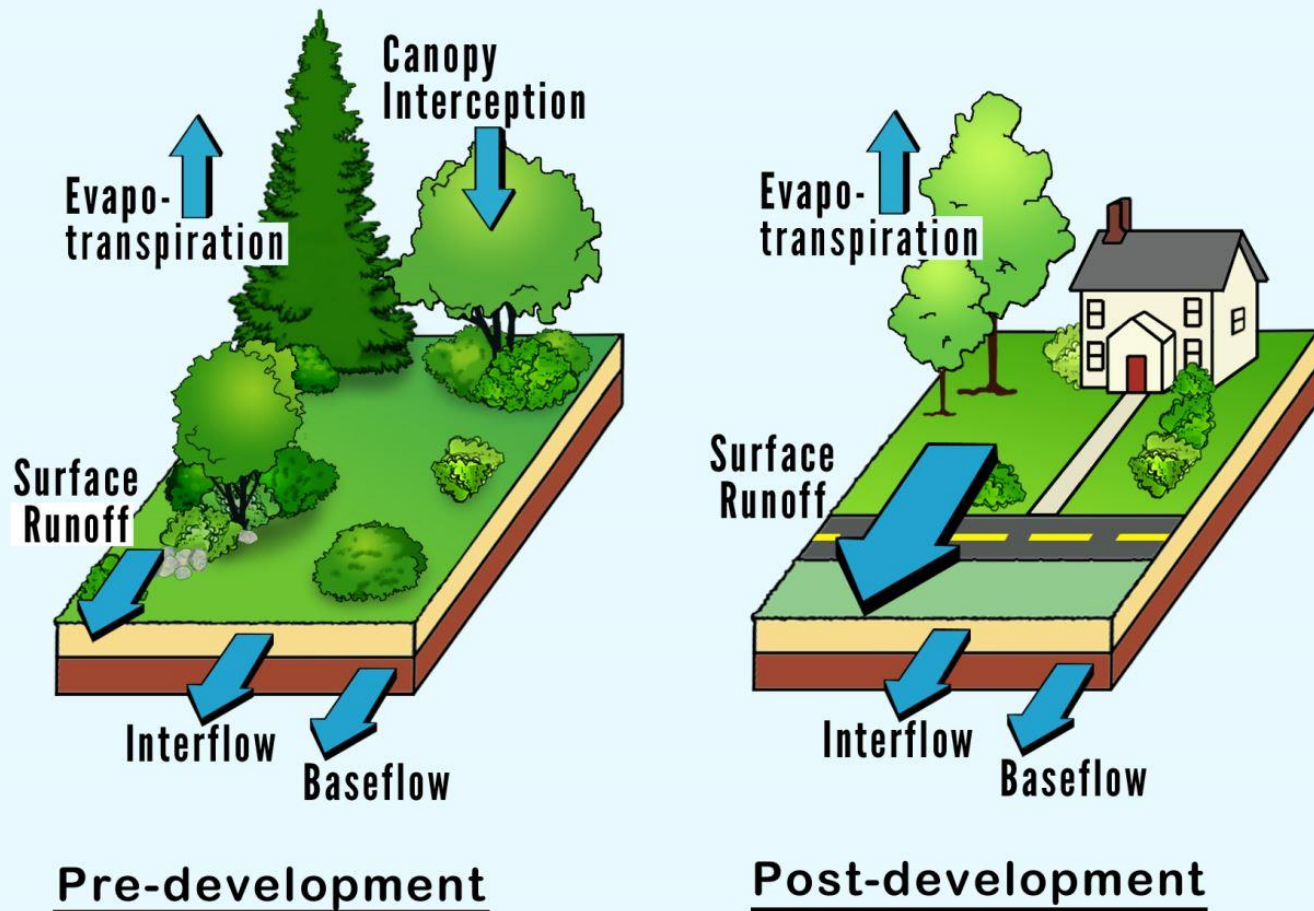
Pre-Development



Post-Development



Figure 1.1 Water Balance at a Developed and Underdeveloped Site
(Source: Schueler, 1987)



Surface runoff is minimal in an undeveloped site, but dominates the water balance at a highly impervious site.



PROBLEM OF STORMWATER POLLUTION

Hot!



Fast!!!



Dirty...



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PROBLEM OF STORMWATER POLLUTION

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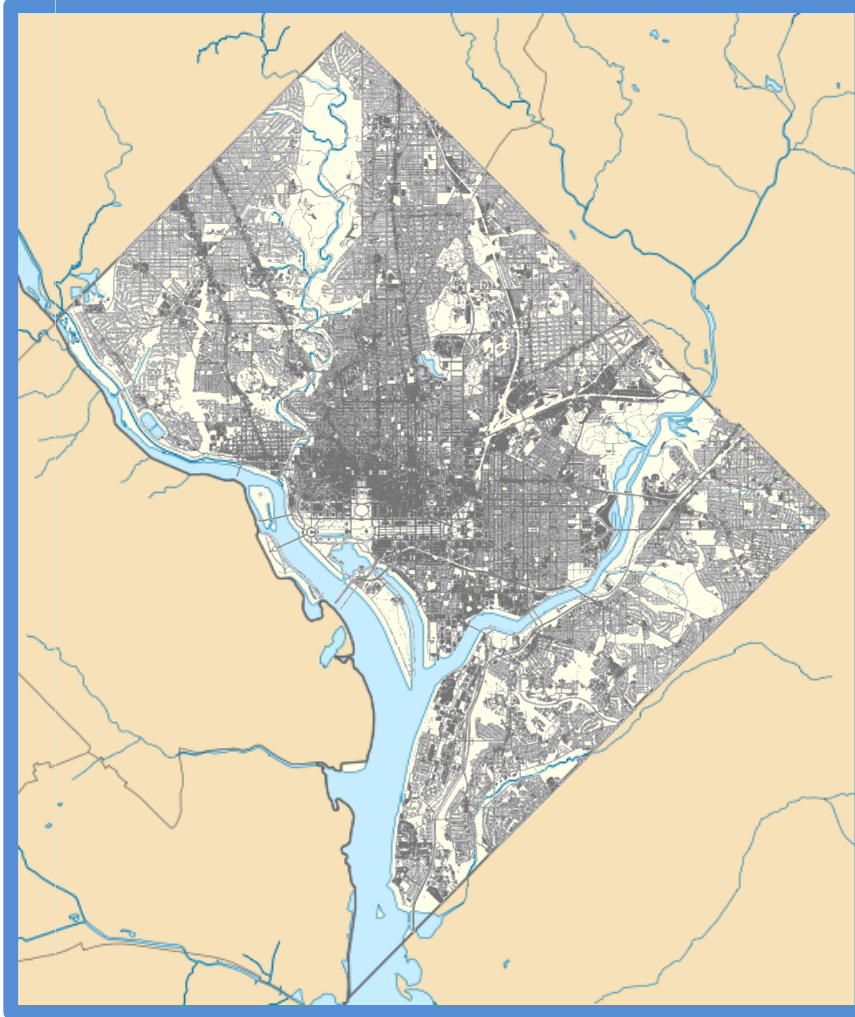


PROBLEM OF STORMWATER POLLUTION

Dirty...



DISTRICT OF COLUMBIA LAND USE



Total Area
68.3 mi²

Land Area
61.3 mi²

Impervious Area
26.6 mi²
Approx 43%
of Land Area

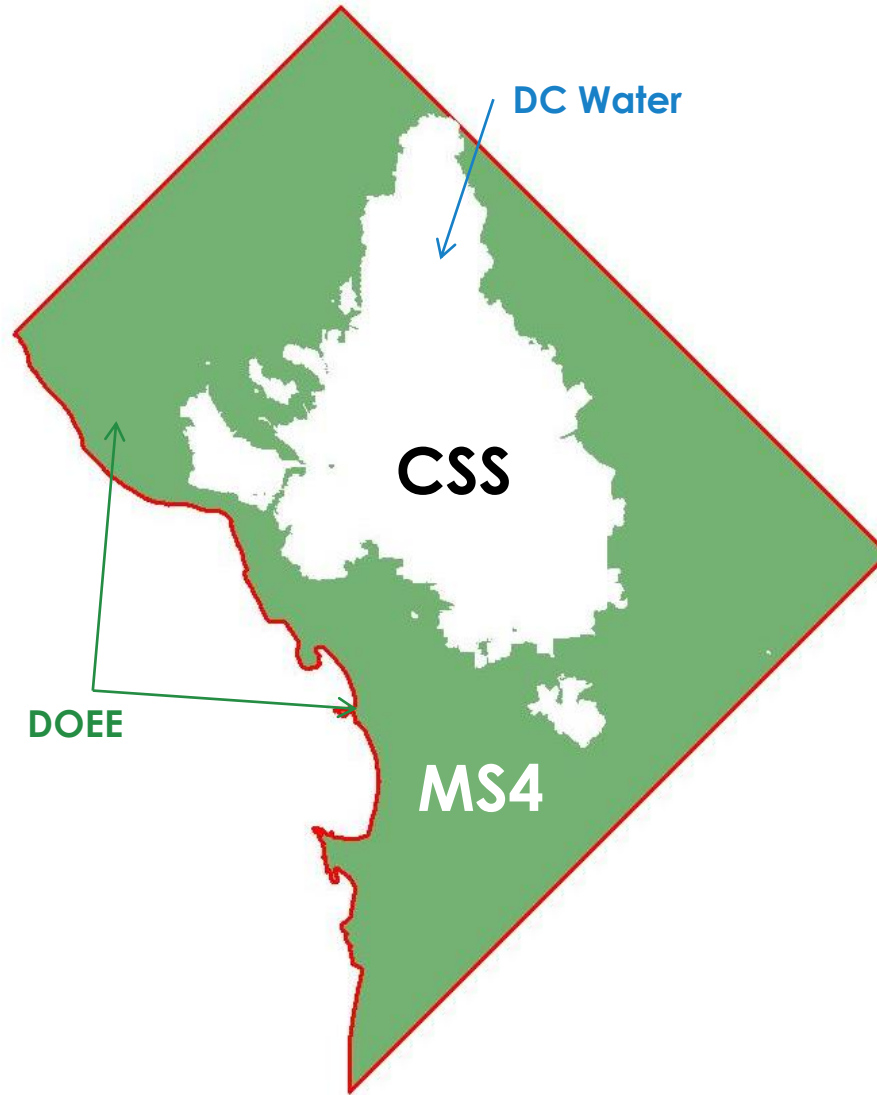
A single 1.2 inch storm falling on this area produces about 525 million gallons of stormwater runoff.



Focus on Impervious



DC'S RESTORATION APPROACHES



EXISTING CONDITIONS







EXISTING CONDITIONS





PROJECT OBJECTIVES

- Treat maximum amount of stormwater from the site in the most cost-effective way
- Work only on District land
- Minimal impacts to the community
- Development of a community amenity
- Educational opportunities



RESTORATION APPROACHES

Most stormwater practices all work the same way: “they collect stormwater runoff and use or mimic natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat” (EPA).

Slow it down, Spread it Out, Soak it In !

GREEN INFRASTRUCTURE TECHNIQUES

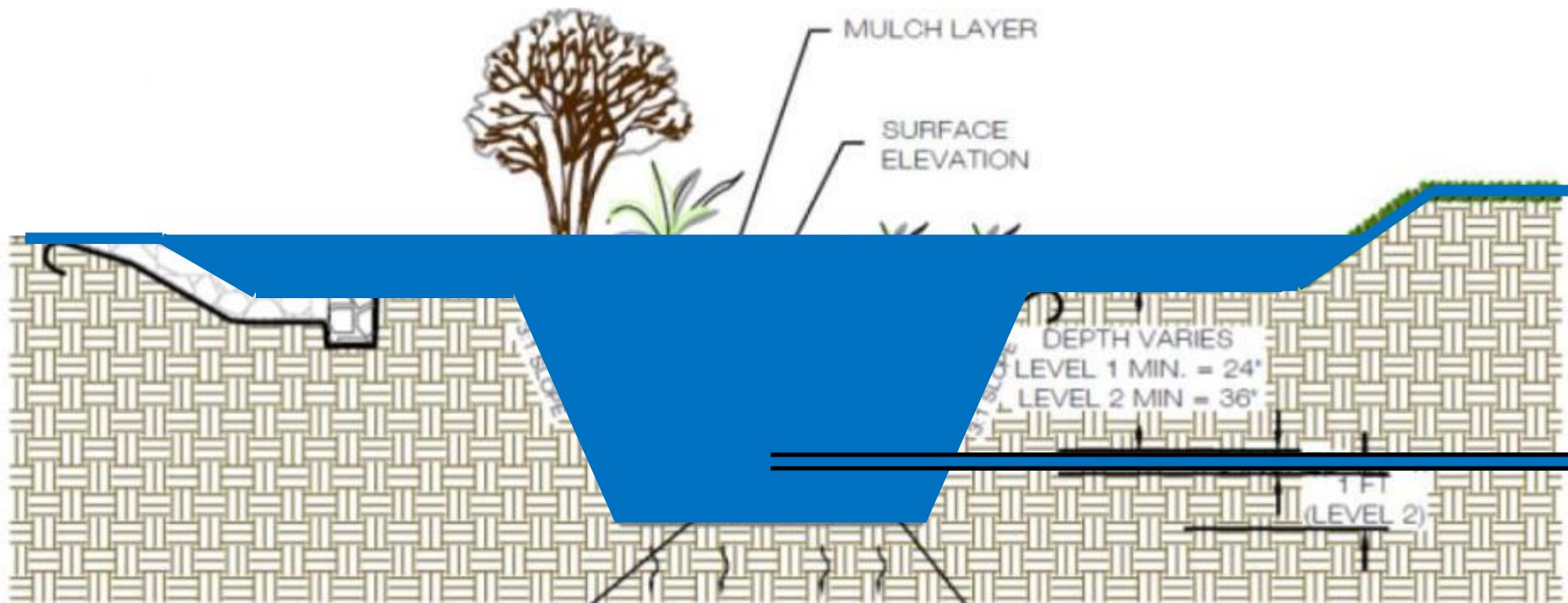
Techniques include:

- **Bioretention**
- Permeable pavement
- Infiltration
- Tree planting/tree pits
- Rainwater harvesting
- Disconnection
- Grass channels
- Green roofs

BIORETENTION



BIORETENTION: HOW IT WORKS





TREES, SHRUB, PERENNIAL, FERNS & GRASS IMAGES



Serviceberry (AME CAN)



Brilliant Chokeberry (ARO BRI)



Buttonbush (CEP OCC)



Mt. Airy Fothergilla (FOT AIR)



Annabelle Hydrangea (HYD ANN)



Shamrock Inkberry (ILE SHA)



Sparkberry Winterberry (ILE SPA)



Little Henry Virginia Sweetspire (ITE LIT)



Gro-Low Fragrant Sumac (RHU GRO)



Winterthur Smooth Witherod (VIB WIN)



Blue Star (AMS STO)



Butterfly Milkweed (ASC TUB)



Marginal Wood Fern (DRY MAR)



Joe Pye Weed (EUT DUB)



Autumn Bride Coral Bells (HEU AUT)



Blue Flag Iris (IRI VER)



Wild Bergamot (MON CLA)



Cinnamon Fern (OSM CIN)



Switch Grass (PAN SHE)



Mountain Mint (PYC VIR)



Black-eyed Susan (RUD FUL)



Goldenrod (SOL FIR)

PLANT SCHEDULE FULL SITE

TREE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION	REMARKS
AME CAN	8	<i>Amelanchier canadensis</i> / Serviceberry	8-10'	Cont.	
SHRUBS					
ARO BRI	10	<i>Aronia arbutifolia</i> / Brilliant Red Chokeberry	2 1/2'-3'	Cont.	
CEP OCC	9	<i>Copulaudonia occidentalis</i> / Buttonbush	2 1/2'-3'	Cont.	
FOT AIR	17	<i>Fothergilla fortunei</i> / Mt. Airy Fothergilla	2 1/2'-3'	Cont.	
HYD ANN	37	<i>Hydrangea arborescens</i> / Annabelle Hydrangea	2 1/2'-3'	Cont.	
ILE SHA	73	<i>Ilex glabra</i> / Shamrock Inkberry	2 1/2'-3'	Cont.	
ILE SPA	3	<i>Ilex verticillata</i> / Sparkberry / Sparkberry Winterberry	2 1/2'-3'	Cont.	
ITE LIT	16	<i>Itea virginica</i> / Little Henry / Little Henry Virginia Sweetspire	2 1/2'-3'	Cont.	
RHU GRO	14	<i>Rhus glabra</i> / Gro-Low / Gro-Low Fragrant Sumac	2 1/2'	Cont.	
VIB WIN	19	<i>Viburnum nudum</i> / Winterthur / Winterthur Smooth Witherod	2 1/2'-3'	Cont.	
GROUND COVERS					
AVS LIT	179	<i>Asplenium adnigrum</i> / Swamp Clay / Swamp Clay Blazer	1 1/2'	Cont.	
ASC TUB	180	<i>Asplenium platyneuron</i> / Swamp Clay / Swamp Clay Blazer	1 1/2'	Cont.	
DRY MAR	167	<i>Dryopteris marginalis</i> / Marginal Wood Fern	1 1/2'	Cont.	
RUT DUB	196	<i>Rudbeckia hirta</i> / Little Joe / Little Joe Pye Weed	1 1/2'	Cont.	
IRI VER	188	<i>Iris versicolor</i> / Autumn Bride / Autumn Bride Coral Bells	1 1/2'	Cont.	
HEU AUT	197	<i>Hebe x exoniensis</i> / Autumn Bride Coral Bells	1 1/2'	Cont.	
OSM CIN	187	<i>Osmunda cinnamomea</i> / Cinnamon Fern	1 1/2'	Cont.	
PAN SHE	121	<i>Panicum virgatum</i> / Switchgrass / Switch Grass	1 1/2'	Cont.	
PYC VIR	49	<i>Pyrola asarifolia</i> / Mountain Mint	1 1/2'	Cont.	
RUD FUL	179	<i>Rudbeckia hirta</i> / Black-eyed Susan	1 1/2'	Cont.	
SOL FIR	64	<i>Solidago nemoralis</i> / Thimbleweed / Thimbleweed Goldenrod	1 1/2'	Cont.	



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DPR II - 4 PARKS
STORMWATER
IMPROVEMENTS

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202.489.6214
www.NaturalResourcesDesign.com
CAGE: LSR00160022021

PROGRESS
PRINT.
NOT FOR
CONSTRUCTION

PLANT IMAGES

Designed: M. ZERHAF
Drawn: M. ZERHAF
Checked: J. HONEYMAN

Date: DECEMBER 12, 2009
Revisions:

L130

PROJECT TIMELINE

- May 2019: contract awarded
- May – August 2019: field assessment (topographic survey, geotechnical investigations etc.)
- August – January 2020: design development
- 3 public meetings:
 - Concept designs on 9/10/19
 - Semi-final designs (~65%): 12/17/19
 - **Second Semi-final designs (~65%): 1/13/21**
 - Construction kickoff meeting (timeline): TBA
- May 2021: construction complete*
- One year of post-construction maintenance included in contract

FAQs

- How do we find our project sites?
 - Enthusiastic landowners!
 - Funding sources
 - Large areas of untreated impervious cover
 - More impactful locations
- What can I do?
 - RiverSmart Homes
 - Rain Gardens
 - Permeable Pavers
 - Rain Barrels
 - Tree Planting
 - “BayScaping”



<https://www.riversmarthomes.org/>

QUESTIONS

